## DESCRIPTION OF A NEW GENERIC TYPE (BASSARICYON) OF PROCYONIDÆ FROM COSTA RICA.

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The large collection of skulls and skins gathered by Professor W. M. Gabb during his scientific survey of Costa Rica, and now deposited in the National Museum at Washington, includes an undescribed species of *Procyonidæ*. This species forms also a new generic type, and, furthermore, one which differs so widely from the forms previously known as to warrant its consideration as the type of a new sub-family, it being as unlike *Nasua* or *Procyon* as these genera are unlike each other. The new form is at present represented in the collection by only a single skull (Nat. Mus. No. 14,214), the skin that came with it (Nat. Mus. No. 12,237) having in some way been mislaid. The skull is that of a rather aged individual, as shown by the obliteration of nearly all of the sutures, and the somewhat worn state of the teeth, but is in excellent condition with the exception of the loss of a few of the teeth.

The outline of the skull in profile (plate 1, fig. 1) is much as in *Procyon*, but the anterior portion is more depressed and is relatively shorter and narrower; the postorbital processes, however, are much more developed, as much so as in *Bassaris* or *Felis*, and the temporal ridges are widely separated, even in old age. As seen from above, the skull has quite a resemblance to that of *Bassaris*, especially in the large size of the orbits, the strongly developed postorbital processes, and the wide interval between the temporal ridges, in all these points resembling *Bassaris* far more than either *Nasua* or *Procyon*, its really nearest affines. The auditory bullæ also differ widely in form and position from those of either *Nasua* or *Procyon*, presenting in some respects features that are exceptional among the carnivora. One of the most important characters, however, of the new type consists in the form of the malar bone, which is greatly depressed and expands abruptly outward in a nearly horizontal plane from the alveolar border of the maxilla, thus forming a nearly horizontal, triangular expansion beneath the orbit—a feature not possessed by any of its nearest affines, and only approximated in *Bassaris* and in the cats. This

results in giving a breadth to the skull at the anterior end of the zygomatic arch but little less than that at its posterior end, at which point the skull has its maximum width. The orbits are relatively twice the size of those of *Procyon*, and being directed considerably forward, give to the skull a quite cat-like aspect. In consequence of the low origin of the malar bone, the small infra-orbital foramen is placed very low, scarcely more than its breadth above the alveolar border of the maxilla.

In respect to other features, the dentition is much as in *Procyon* and *Nasua* $\left(\text{M. } \frac{6}{6}\ \text{C. } \frac{1}{1}\ \text{I. } \frac{3}{3} = \frac{20}{20} = 40\right)$. The canines, however, are smaller than in *Nasua*, and the molars are shorter and more nearly square than in either this genus or *Procyon*, as shown by the subjoined table of measurements:—

| | | Length. | Width. |
|---|---|---|---|
| Bassaricyon Gabbii, | 1st upper molar . . | 0.15 | 0.17 |
| Nasua Sumichrasti, | " " " . . | .30 | .27 |
| Procyon "Hernandezii," | " " " . . | .34 | .35 |
| Bassaricyon Gabbii, | 2d upper molar . . | .19 | .20 |
| Nasua Sumichrasti, | " " " . . | .33 | .30 |
| Procyon "Hernandezii," | " " " . . | .37 | .33 |
| Bassaricyon Gabbii, | 3d upper molar . . | .14 | .14 |
| Nasua Sumichrasti, | " " " . . | .30 | .38 |
| Procyon "Hernandezii," | " " " . . | .28 | .34 |
| Bassaricyon Gabbii, | 1st lower molar . . | .15 | .13 |
| Nasua Sumichrasti, | " " " . . | .32 | .18 |
| Procyon "Hernandezii," | " " " . . | .28 | .18 |
| Bassaricyon Gabbii, | 2d lower molar . . | .17 | .15 |
| Nasua Sumichrasti, | " " " . . | .37 | .20 |
| Procyon "Hernandezii," | " " " . . | .42 | .30 |
| Bassaricyon Gabbii, | 3d lower molar . . | .20 | .17 |
| Nasua Sumichrasti, | " " " . . | .32 | .24 |
| Procyon "Hernandezii," | " " " . . | .41 | .25 |

In the present species the last upper molar is nearly quadrate with rounded angles; in *Procyon* it is subtriangular, with the inner and posterior outer angles rounded; in *Nasua* it has the same form as in *Procyon*, except that the posterior outer angle is sharp.

The palate is flat, not arched as in *Procyon* and *Nasua*, and well produced posteriorly. The auditory bullæ are greatly swollen posteriorly; depressed and laterally compressed anteriorly. The

basi-occipital margin of the bullæ is deflected inward, so that posteriorly the bullæ converge, just the reverse of what obtains in *Procyon*, in which the bullæ diverge posteriorly, and are most swollen and deflected anteriorly. In *Nasua* the auditory bullæ are placed much as in *Procyon*, but they are more globular, and are well developed anteriorly. The converging of the bullæ posteriorly rarely occurs among the Carnivora. The pterygoid processes are relatively smaller than in *Procyon* and *Nasua;* the paroccipital and mastoid processes are but slightly instead of strongly developed, and the paroccipital are not incurved. The anterior end of the intermaxillæ is more pointed than in *Procyon*, but less so than in *Nasua*.

The lower jaw differs from that of *Procyon* in its straight instead of slightly concave alveolar border, straighter lower border, and more diverging coronoid process. The coronoid process is also nearly straight on the anterior border to its apex, instead of greatly rounded, and is much less hollowed posteriorly. The apex of the coronoid is also pointed, and is situated in a line with its anterior border. The angle of the jaw is also much less developed, and the inferior dental canal opens considerably more posteriorly than in *Procyon*. In most of these points the lower jaw much more closely resembles that of *Nasua* than that of *Procyon*.

The skull indicates an animal as small or smaller than *Bassaris astuta*—decidedly smaller than *Bassaris Sumichrasti*—and hence not more than one-fourth the size of the smallest known form of either *Procyon* or *Nasua*, as indicated by the following table of

*Measurements of Skulls of Procyon, Nasua, Bassaris, and Bassaricyon.*

| | Bassaricyon Gabbii. S. I. No. 14,214. | Nasua leucorhynchus. S. I. No. 14,193. | Procyon cancrivora. S. I. No. 6949. | Procyon "Hernandezii." S. I. No. 14,191. | Bassaris Sumichrasti. S. I. No. 7082. |
|---|---|---|---|---|---|
| Total length | 3.10 | 5.52 | 5.10 | 4.95 | 3.42 |
| Length (anterior end of intermaxillæ to occipital condyles) | 2.95 | 5.02 | 5.00 | 4.63 | 3.30 |
| Greatest width | 1.95 | 3.23 | 3.40 | 3.35 | 2.22 |
| Width at mastoid processes | 1.33 | 2.15 | 2.00 | 2.80 | 1.45 |
| Distance between the orbits | .60 | 1.30 | 1.05 | 1.10 | .75 |
| Width at orbital processes | 1.15 | 1.75 | 1.33 | 1.30 | 1.23 |
| Length of nasal bones | ... | ... | 1.38 | ... | ... |
| Width of nasal bones at the middle | .20 | ... | .53 | ... | ... |
| Anterior end of intermaxillæ to molars | .83 | 1.60 | 1.30 | 1.35 | .83 |
| Anterior end of intermaxillæ to posterior margin of palate | 1.73 | 3.37 | 3.10 | 2.97 | 1.47 |
| Anterior end of intermaxillæ to orbit | .84 | 2.25 | 1.50 | 1.60 | 1.00 |
| Anterior end of intermaxillæ to orbital processes | 1.55 | 3.00 | 3.53 | 2.40 | 1.72 |
| Width of muzzle at the canines | .67 | 1.00 | 1.30 | 1.15 | .67 |
| Width of palate at second molar | .60 | .75 | .83 | .92 | .47 |
| Length of upper molar series | .92 | 1.50 | 1.60 | 1.60 | 1.07 |
| Length of the three true molars | .47 | .87 | 1.10 | .97 | .63 |
| Length of lower molar series | .95 | 1.67 | 1.87 | 1.70 | 1.13 |
| Length of the three true molars | .55 | 1.03 | 1.26 | 1.17 | .72 |
| Length of lower jaw | 2.20 | 3.82 | 3.75 | 3.40 | 1.37 |
| Height of lower jaw | 1.03 | 1.30 | 1.65 | 1.52 | 1.03 |

The loss of the skin renders it impossible to now properly characterize the species, but as it is presumably only temporarily mislaid, we hope soon be able to make known its external characters. The large size and position of the orbits, and the large bullæ, seem to indicate an animal of nocturnal habits. It is also evidently rather rare, or very difficult to obtain, since Professor Gabb's collection, which embraces very large series of all the more common species, contains but a single example of this.

For the genus I propose the name *Bassaricyon*, in allusion to its strong resemblance in several features to *Bassaris*, and for the species that of *Gabbii*, in recognition of Professor Gabb's invaluable contributions to our knowledge of the zoology and general natural history of the Republic of Costa Rica. As the species differs more from either *Nasua* or *Procyon* than the latter do from each other, it seems to form a type quite as well entitled to rank as a sub-family of the *Procyonidæ* as do either of the others, and may hence be called *Bassaricyoninæ*.